

(Fresh)Water Working Group

Marn-Yee Lee, chair
Steve Bishop, chair
Elizabeth Sarmiento

With input from:
Bruce England
Laura Allen
Ignacio Delgado
Anurag Mishra



What we did

- Talked to folks
- Interviews
- Other citizens and task force members
- Field trips
- Other cities plans
- Weekly meeting
- Public input

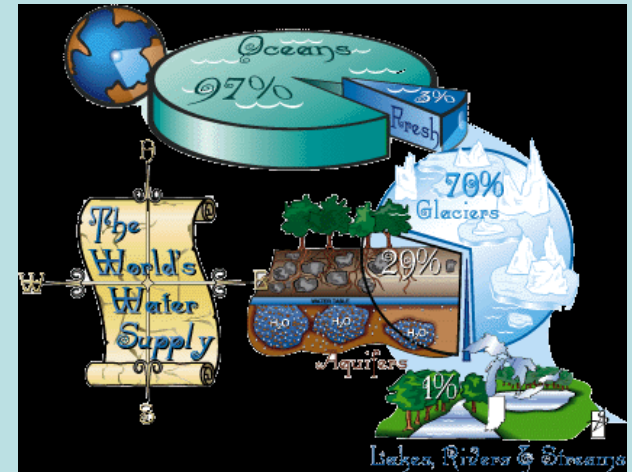


Who we talked to

- Waste Water Treatment: Phil Bopel
- MOC: Greg Hosteldt and David Serge
- MV Conservation Technician: Tom Ford
- Sierra Club: Mondy Lariz
- Greywater Guerilla: Laura Oakland
- SCVWD: Liz Sarmiento
- Other citizens and task force members

Why Water Is Important

- **It will get more expensive**
 - Hetch Hetchy 150 yrs old
- **It is not very secure**
 - Pipeline crosses 4 earthquake faults
 - Wells: 40% needs, 6-8M gallons/day.
 - Reservoirs: 3 days rationed use.
 - Fire department only gets 2M gallons to fight fires



- **It is scarce**
 - California population growth: 38M to 60M by 2050
 - Sierra snowpack decreasing
- **Water is energy intensive**
 - 19% of CA electricity, 30% of CA natural gas



It is scarce

Drought declared 6/5/08

- **EBMUD:** Mandatory 15% water use reduction
- **SCVWD:** Voluntary 10% water use reduction

Precipitation: 22% of normal

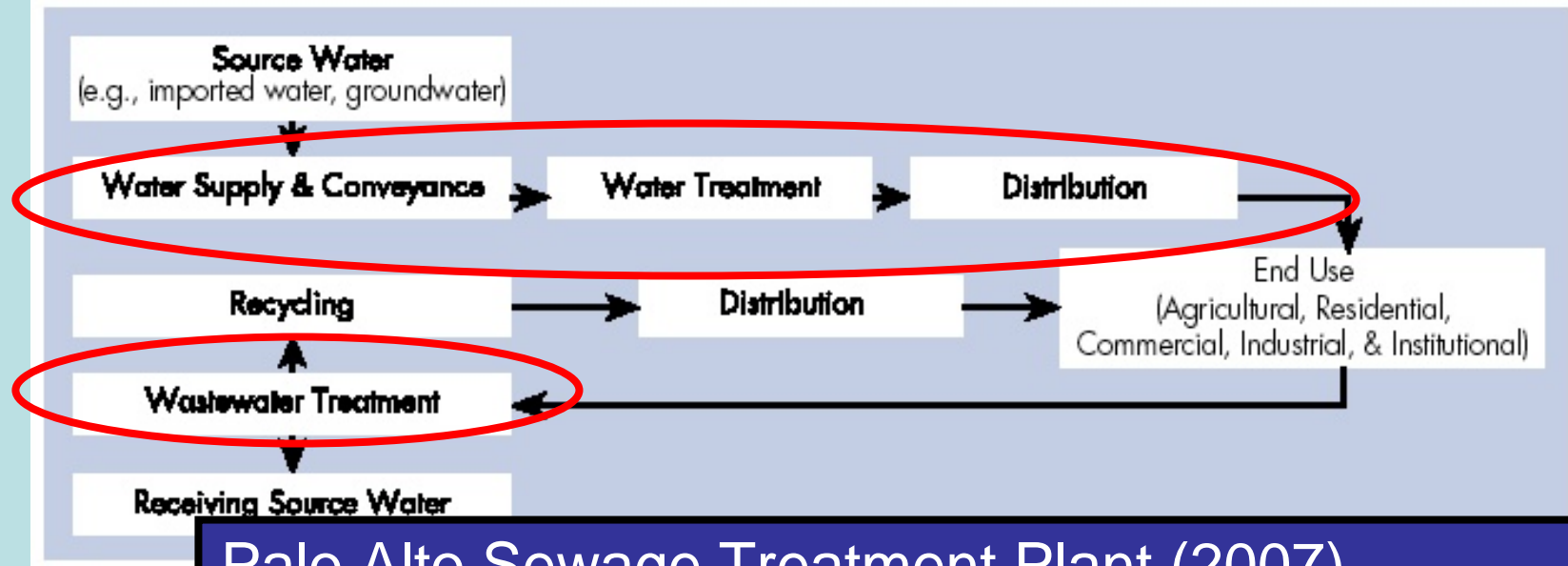
Snowpack: 69% of normal

Reservoir: 50-63% of normal

River runoff: 55% of normal

Water Is Energy Intensive

Figure 4 • THE WATER SUPPLY CHAIN IS ENERGY INTENSIVE



Palo Alto Sewage Treatment Plant (2007)

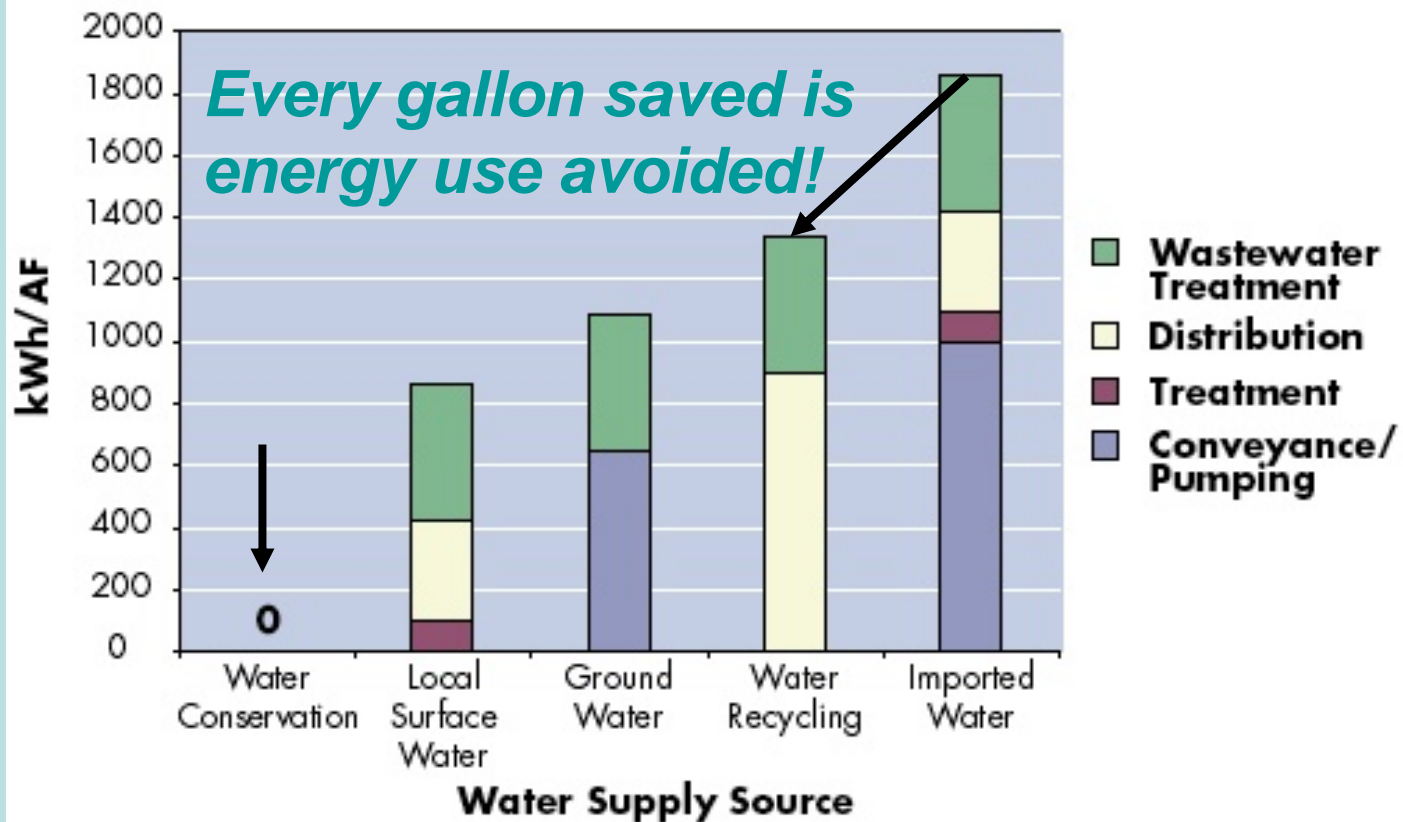
Mt. View 6.63M KWH to treat sewage before sending to Bay

0.8M KWH to deliver water

1.4M KWH to pump to wastewater treatment plant

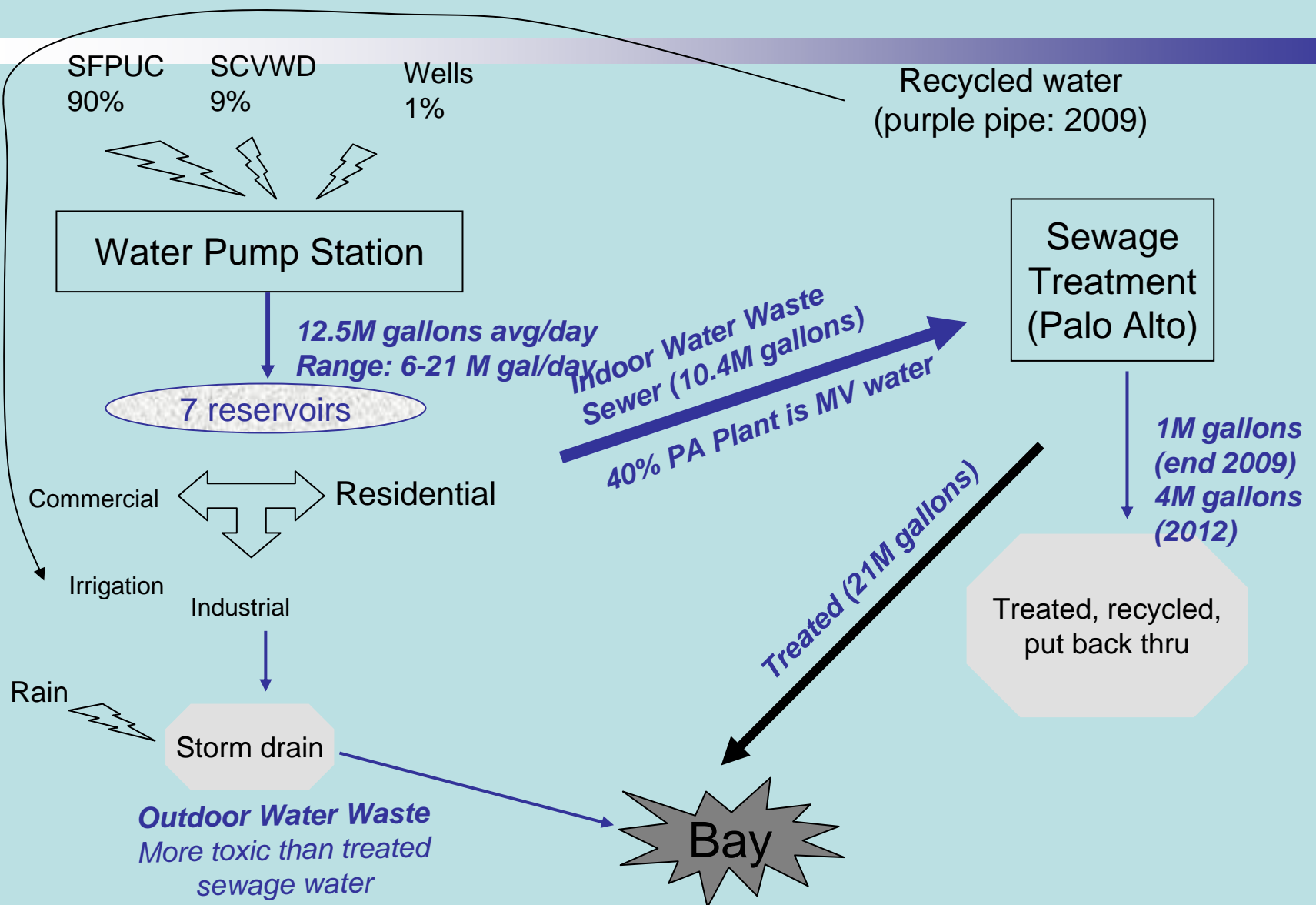
Water Is Energy Intensive

ENERGY FACTORS FOR DISTRICT WATER SUPPLY SOURCES



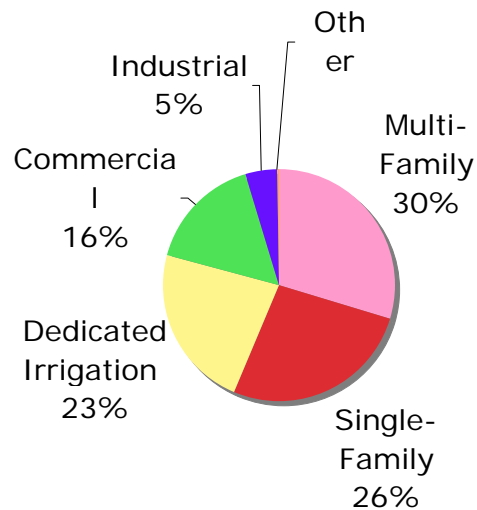
Source: Watt to Water, SCVWD

Water Movement in Mt. View

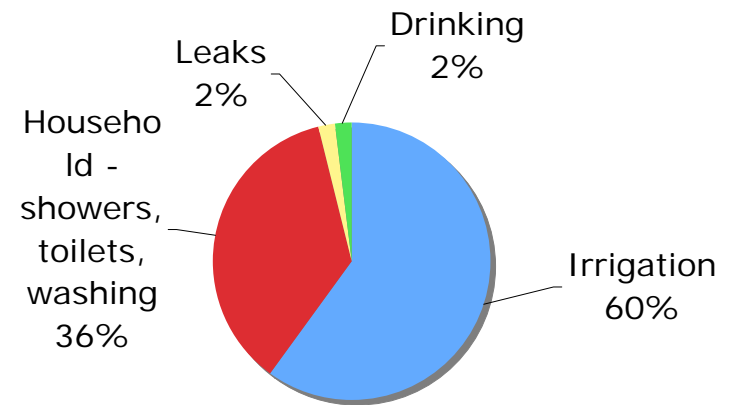


Mountain View Statistics

Mountain View Usage Breakdown



Residential Usage



16,200 water meters in the city



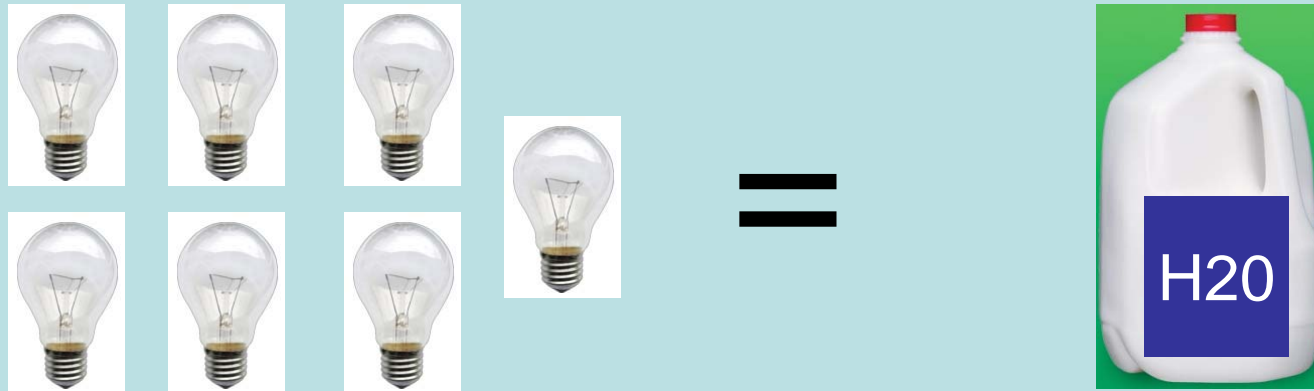
Mt. View Water Energy Intensity

**1 gallon cold water =
710 watt-hour energy =
0.4 lbs CO₂e**

- Palo Alto Sewage plant (2007)
 - Sewage processing: 17M kWh / year = 4454 tons CO₂ / year
 - MV Generates about 39% of this (6.63M kwh)
- MOC Water Processing plant (2005)
 - Water delivery (potable/irrigation): 0.8M kWh
 - Sewage/Wastewater/Storm water pumping: 1.4M kWh



Mt. View Water Energy Intensity



To save energy and reduce GHGs, you could....

Change all light
bulbs to CFLs

Cost: \$50

OR

Reduce shower
time by 2 min

Cost: \$0



Key Takeaway

- Largest water user: residential
- Largest water usage: landscaping
- Water treatment plant = largest energy user
- 1 golf course uses 8% of all water
- 2% of potable water delivered is consumed
- 99% of our water comes from Hetch Hetchy
- Hetch Hetchy has the best water in the world
- Storm drain water is more toxic than sewage
- Unanimous and high interest in sustainability

CONSERVATION and RECYCLING are KEY



1. Tap into existing
conservation programs
(to the max extent possible)



Tap into Existing Conservation Programs

County Programs

Residential

- Water-wise house call
- Rebates
 - High-efficiency Toilet
 - Washer
 - Residential Irrigation System Hardware
 - Water Efficient Landscape
 - Water Softener Rebate
- Water-wise Landscaping Workshop

Commercial

- **Water Efficient Tech (WET)**
- **Rebates**
 - Commercial Water Softener
 - Commercial Clothes Washer
 - High Efficiency Toilet
 - Irrigation System Hardware
 - Weather Based Irrigation Controller
- **Irrigation Technical Assistance (ITAP)**
 - FREE
 - Est savings \$1000/acre



Tap into Existing Conservation Programs

Baseline: Commercial User Interests

Interest in water conservation program

1. Indoor audit
2. Outdoor audit
3. Toilet replacement program
4. Recycled water for outdoor use
5. Voluntary landscape conversion with grants

Reasons to conserve water

1. Prevent future shortages
2. Save money
3. Protect environment

Importance of media for conservation awareness

1. Word-of-mouth from other water professional
2. TV ads/programs
3. Info/consultation from district

Source: SCVWD Baseline Study, Survey of Commercial, Inst, Industrial Users, Feb 2008



Tap into Existing Conservation Programs

Today in Mountain View

- **Coordinator**
- **Hotline, (650) 903-6269**
- **[Link](#): city webpage**
- **Ordinances (“complaint basis”)**
 1. Hose must have auto-shutoff valve
 2. Wasteful potable water runoff
 3. Serving water in restaurants except by request
 4. Wasteful leaks and over-watering
 5. Installing single-pass cooling systems on new construction





Tap into Existing Conservation Programs

Proposals for Outreach Priorities

- Tackle biggest water usage areas first
 - Landscaping!
- Use media to promote hotline / programs
- Improve website
- Leverage county programs to the max extent possible
- Neighborhood Conservation Advocate



Tap into Existing Conservation Programs

Concept: Conservation Advocate



This is Don, a retired school teacher, handy man, and 'go to' guy in the neighborhood. He is concerned about climate change.



Don sees an ad in *The Voice* about water conservation courses and advocates



He goes to the website listed to find out more and signs up for a Saturday afternoon class

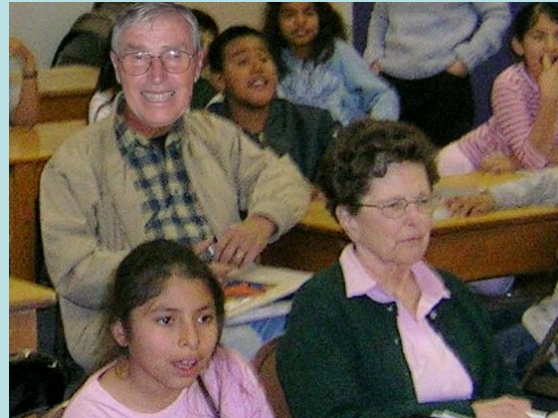


Tap into Existing Conservation Programs

Concept: Conservation Advocate



He walk over to the community center the day of the event...



...attends class with others from the community...



...and received his certificate in water conservation.



Tap into Existing Conservation Programs

Concept: Conservation Advocate



A short while later, Don receives his guidebook, an official conservation expert hat and nametag



He announces his new role on his neighborhood association email list...



...and soon responds to his first conservation help request



Tap into Existing Conservation Programs

Concept: Conservation Advocate



Together, he and his neighbor audit her indoor and outdoor water systems...



And he leaves her a set of tips for increasing efficiency



And he enjoys his new role in the community.



Tap into Existing Conservation Programs

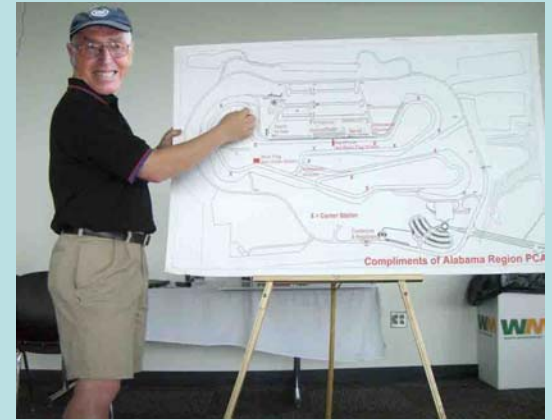
Concept: Conservation Advocate



He might also host informational get-togethers at his home...



...patrol his neighborhood and report leaks...



Or become an advocate instructor himself



Tap into Existing Conservation Programs

Benefits: Conservation Advocate

- Builds community
- Provides real tools for tackling climate change
- Increases property values
- Saves city and residents money
- Serves as it's own outreach program

2. Strengthen water ordinances with incentives (and fines)



Strengthen Water Ordinances

Proposal: Outreach priorities

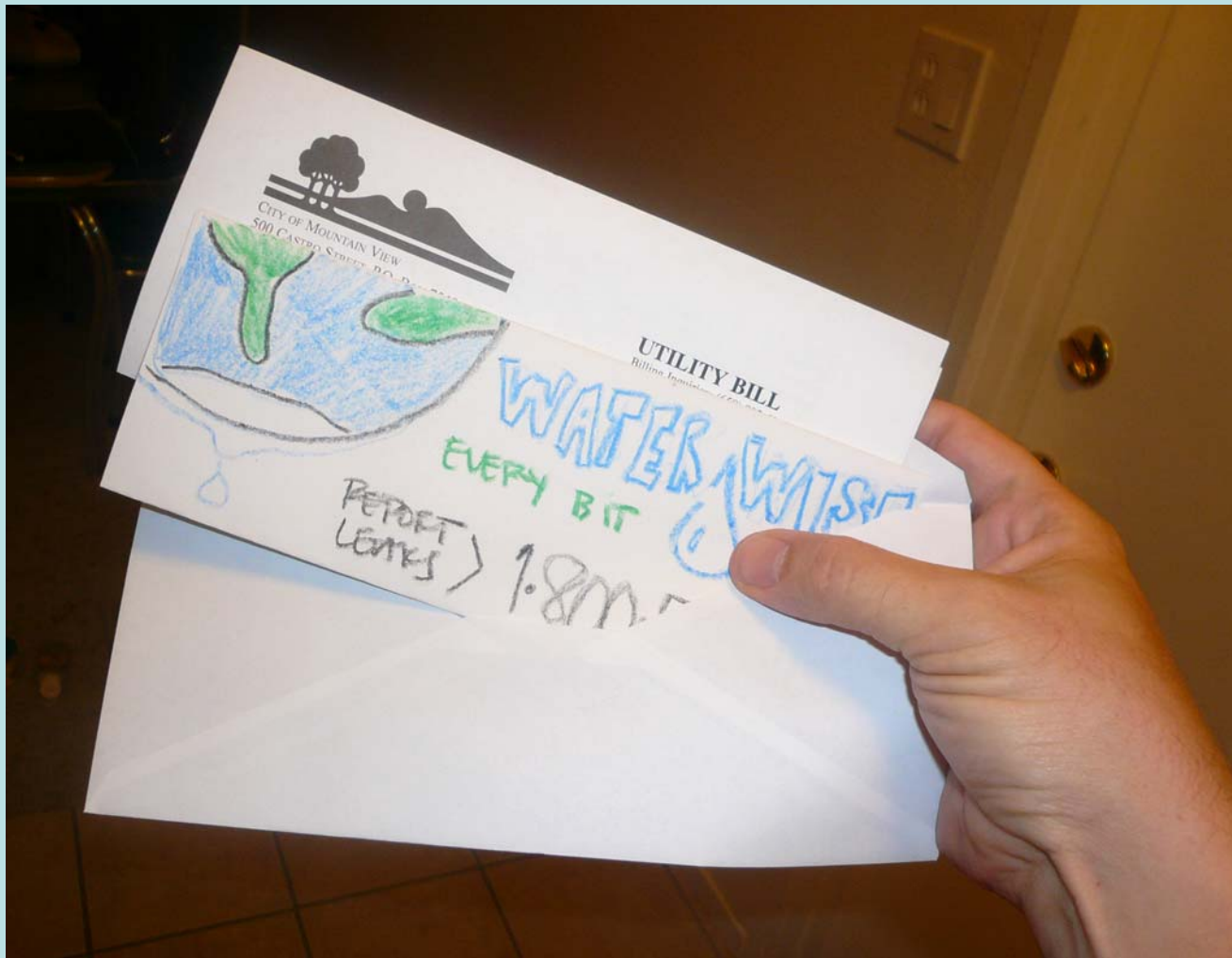
- Publicize hotline
- Devote more resources to incentives and enforcement
- Institute new incentive programs and fines





Strengthen Water Ordinances

Concept: Hotline bumpersticker



3. Build up city water conservation team



Build Conservation Team

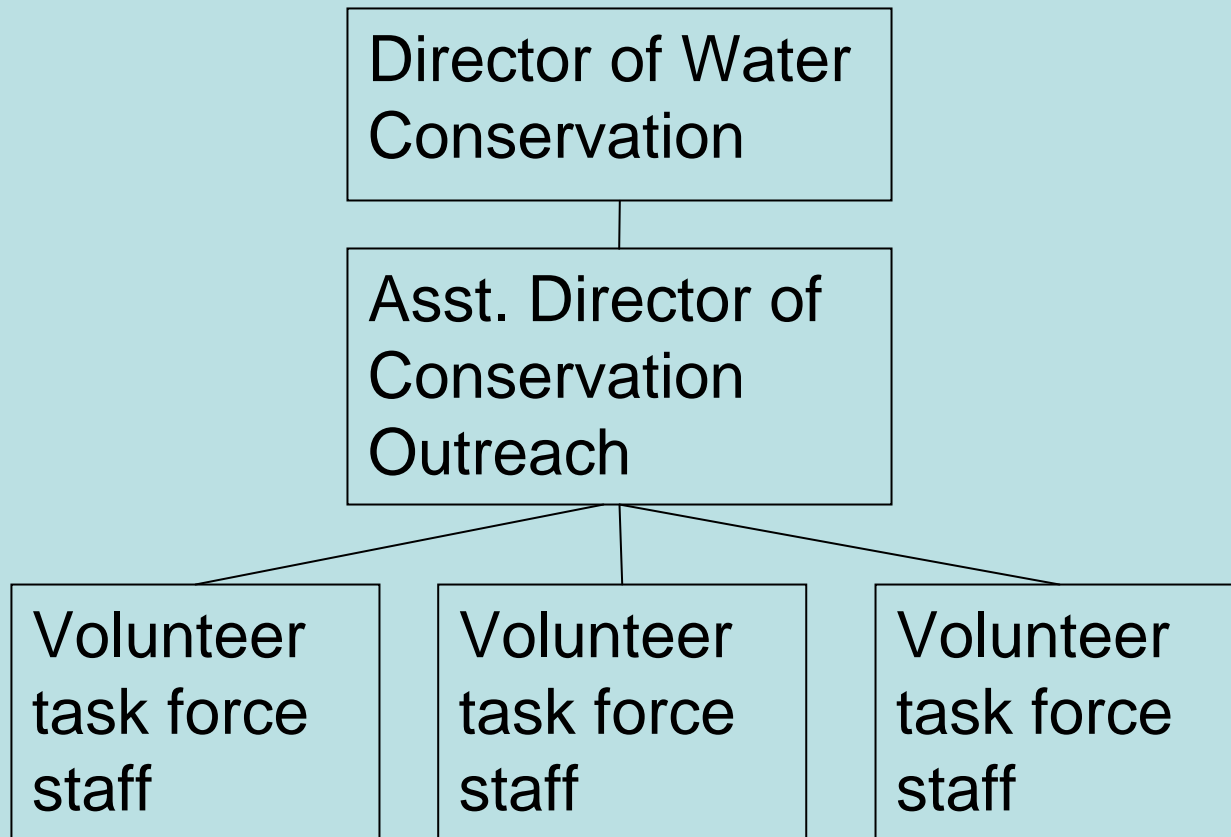
Specifics

- At least 2 full-time positions
- Leverage SCVWD staff resource / grant process for headcount
- Marketing budget
- Encourage / reward water conservation mindset for all city departments
 - Landscaping
 - Finance
 - Water MOC



Build Conservation Team

Specifics





Build Conservation Team

Benefits

- Walk the Talk appeal of the city
- Leadership in Sustainability
- More bandwidth to leverage existing programs
- Saves the city money in the end
- Gets things rolling for residents

4: Make Mountain View *the*
beautiful, drought tolerant
landscaped city



Make MV Beautiful Proposals

- **Incent water-wise landscaping :**
 - automatic irrigation systems
 - time-based to weather-based
 - water-efficient plantings - native plants
 - Max recycled water
- **Training / Outreach**
 - Quarterly session for residents
 - Twice annual meeting with businesses





Make MV Beautiful

Concept: “Make MV Beautiful” Booklet

- “Make MV Beautiful” incentives written into code.
- “Make MV Beautiful” program booklet handed out with permits as appropriate
- Permits are applied for online to push more information on the program
- Award best participants with spot in “MMVB Green Home Tours”





Make MV Beautiful

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5. Use the water bill to
encourage conservation



Use Water Bill for Conservation

Today's Bill

- Finance Dept
- Billed per “unit”
 - 1 unit = 748 gallons
- Current vs. past period usage
- Bimonthly
- Rate table online



CITY OF MOUNTAIN VIEW
500 CASTRO STREET, P.O. BOX 7540
MOUNTAIN VIEW, CALIFORNIA 94039-7540

UTILITY BILL
Billing Inquiries: (650) 903-6317
Water/Sewer Emergency: (650) 903-6329
After Hours Emergency(after 5pm) (650) 903-6344

MARN-YEE LEE
1850 MONTECITO AV
MOUNTAIN VIEW CA 94043

Account #: 6070-341000.04
1850 MONTECITO AV
Meter Number: 38787907
Bill Date: 04/15/08
Service From: 02/06/08 To 04/03/08 Days 58

| DESCRIPTION OF CHARGES | AMOUNT |
|------------------------|--------|
| Water | 16.27 |
| Sewer | 44.30 |
| Residential 32 Gal | 31.50 |
| Subtotal | 92.07 |
| Prior Balance | 94.30 |
| Payments | -94.30 |
| TOTAL DUE: | 92.07 |

*****NOTICE*****

Want to pay your bill automatically?
Go to www.DirectPaymentPlan.com or
Call (650) 903-6317 for details

WATER METER READINGS:
CURRENT PRIOR TOTAL
1488 1483 5

| WATER USAGE: | DAYS | UNITS CONSUMED | PLEASE NOTE: THIS BILL IS PAYABLE UPON RECEIPT AND DELINQUENT AFTER 30 DAYS. |
|-----------------------|------|----------------|---|
| Current Period | 58 | 5 | |
| Prior Period | 63 | 6 | |
| Same Period Last Year | | | |

1 Unit = 748 gallons

PLEASE RETURN THIS PORTION WITH PAYMENT

Please make check payable and remit to:

CITY OF MOUNTAIN VIEW
File No 73015
PO Box 60000
San Francisco, CA 94160-3015

MARN-YEE LEE
1850 MONTECITO AV
Acct#: 6070-341000.04

TOTAL DUE: 92.07



Use Water Bill for Conservation

Concept: A Better Bill

| Water | Rate/ 1,000 gal | Used 1,000 gal | Cost |
|---------------------------|--------------------|-------------------|---------|
| Service Charge | | | 8.55 |
| 0 - 11,000 gal | 1.88 | 6 | 11.28 |
| 11,001 - 17,000 gal | 1.97 | | |
| 17,001 - 26,000 gal | 2.10 | | |
| 26,001 - 34,000 gal | 2.30 | | |
| 34,001 + | 2.50 | | |
| Total Water | | 6 | \$19.83 |
| Wastewater Service Charge | | | 0.74 |
| Quantity | | 4 | 14.00 |
| Flood Management | | | 6.75 |
| Total Current Charges | | | \$41.32 |
| Please Pay This Amount | | | \$41.32 |

Rate table

Account Summary

(1,000 Gallons)

Current use: 6

Budget this bill cycle: 17

Use last year: 15

Y-o-y comparison

Estimated water budget next bill cycle: 18

Avg. monthly winter usage (Dec.-Mar.): 4

Conservation tips

Please Note:

PLEASE DO NOT PAY

TOTAL AMOUNT DUE WILL BE TRANSFERRED
AUTOMATICALLY ON OR AFTER 07/02/07

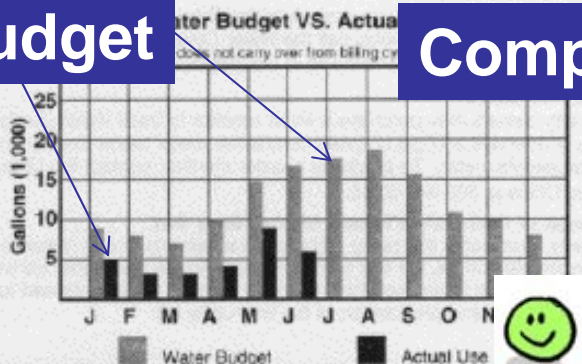
Check For Leaks

Leaks or poorly maintained systems

Past year historical usage

Water budget

Comparison to residential average



amounts of water can be lost.
It will save you money!
For more water saving tips go to
boulderwater.net or call Water
Conservation at 303 413-7407.

** THANK YOU FOR YOUR PROMPT PAYMENT **



Use Water Bill for Conservation

Concept: A Better Bill

Water
conservation
inserts



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| Payments | -94.30 |
| TOTAL DUE: | 92.07 |

| WATER METER READINGS: | | |
|-----------------------|-------|-------|
| CURRENT | PRIOR | TOTAL |
| 1488 | 1483 | 5 |

Sewer / Wastewater
terminology

Emissions information

Digital access
(include link to conservation tips)

NOTE: THIS BILL
IS VOIDABLE UPON RECEIPT
OF PAYMENT. RETURN TO
CITY OF MOUNTAIN VIEW
INQUENT AFTER

PLEASE RETURN THIS PORTION WITH PAYMENT

Please make check payable and remit to:

CITY OF MOUNTAIN VIEW
File No 73015
PO Box 60000
San Francisco, CA 94160-3015

MARN-YEE LEE
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Acct#: 6070-341000.04

TOTAL DUE: 92.07

6. Reduce water runoff



Reduce Water Runoff

- “Storm water runoff is more toxic than sewage.”
- Storm water is not treated before entering the bay
- It takes energy to get storm water to the bay
- Missed opportunity to recharge water table



Reduce Water Runoff

Concept: “Pavers not Pavement” policy

- Incent homeowners to install pavers or permeable surfaces for driveways instead of concrete or asphalt
- Focus on, but do not limit efforts to driveways
- Create list of recommended contractors
- Certify paver installers to ensure quality

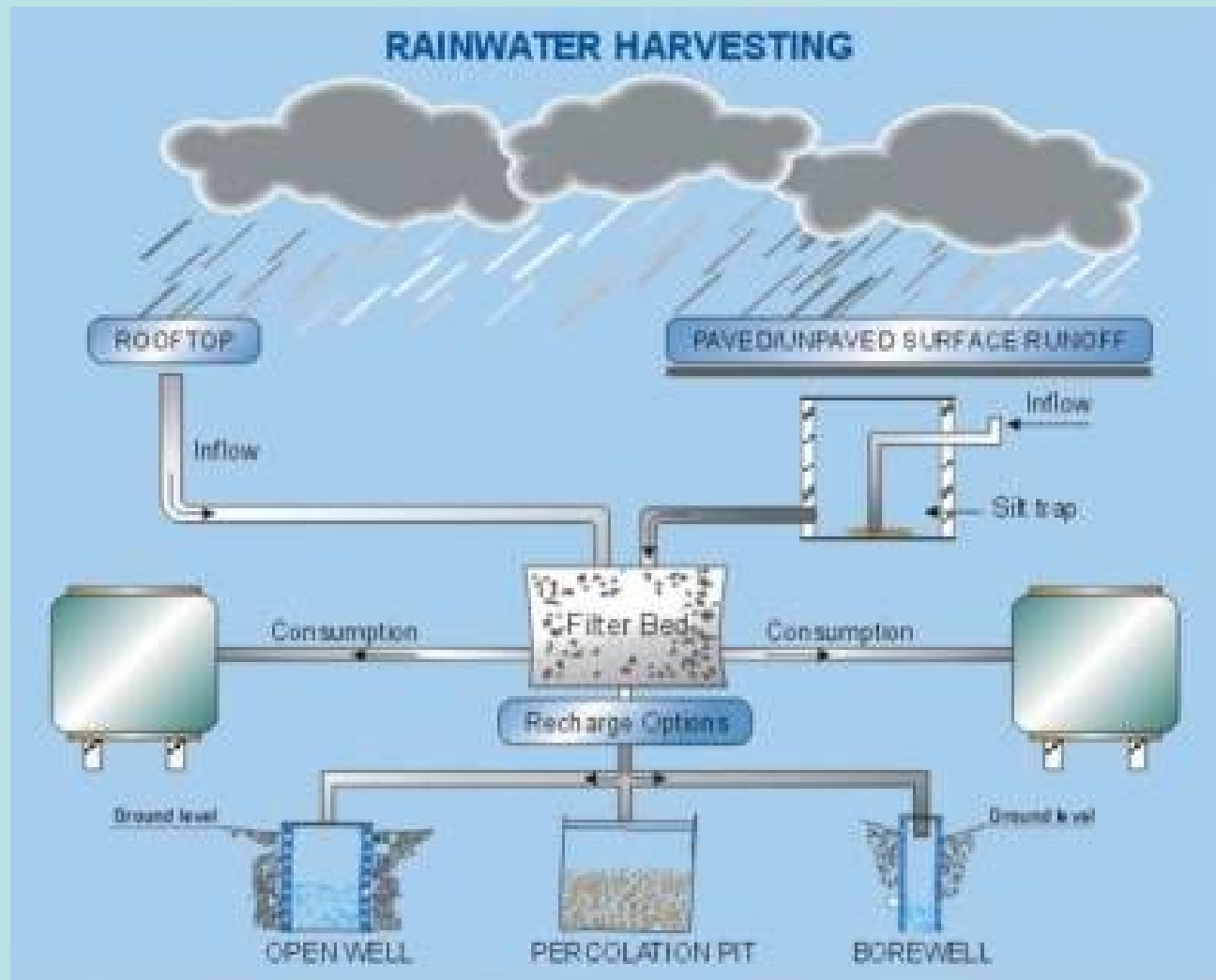


Benefits: “Pavers not Pavement”

- 1) Makes paved surfaces more attractive
- 2) Allows more water through to recharge water table
- 3) Reduce load on stormwater and waste water systems
- 4) Reduces toxicity of creeks
- 5) Encourages closer ties to natural systems
- 6) Saves city and residents money

7. Encourage rainwater harvesting

What is rainwater harvesting?



MV precipitation: 15" per year

Encourage Rainwater Harvesting

Concept: Rainwater

Incent new buildings that are constructed in Mountain View to do this.

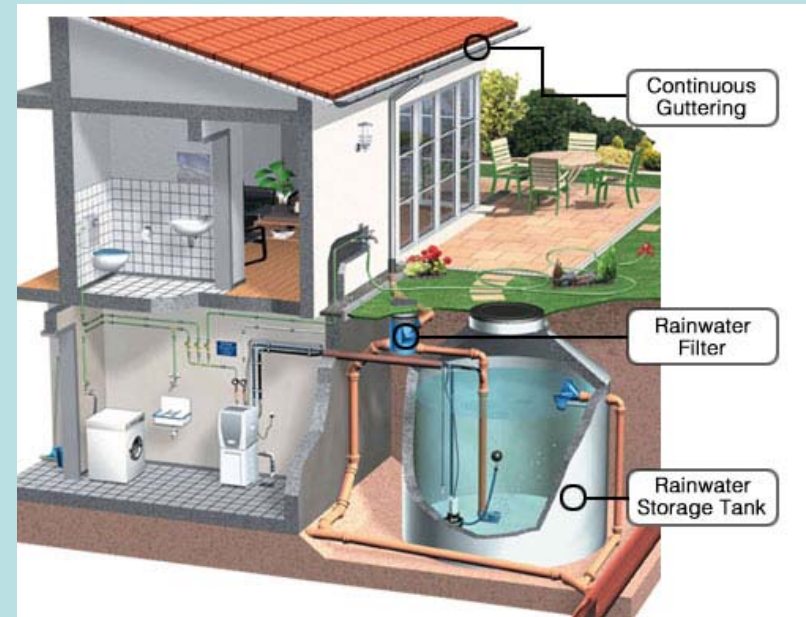
The City must also encourage people who wish to install any of this kind of system in their property.



Encourage Rainwater Harvesting

Benefits

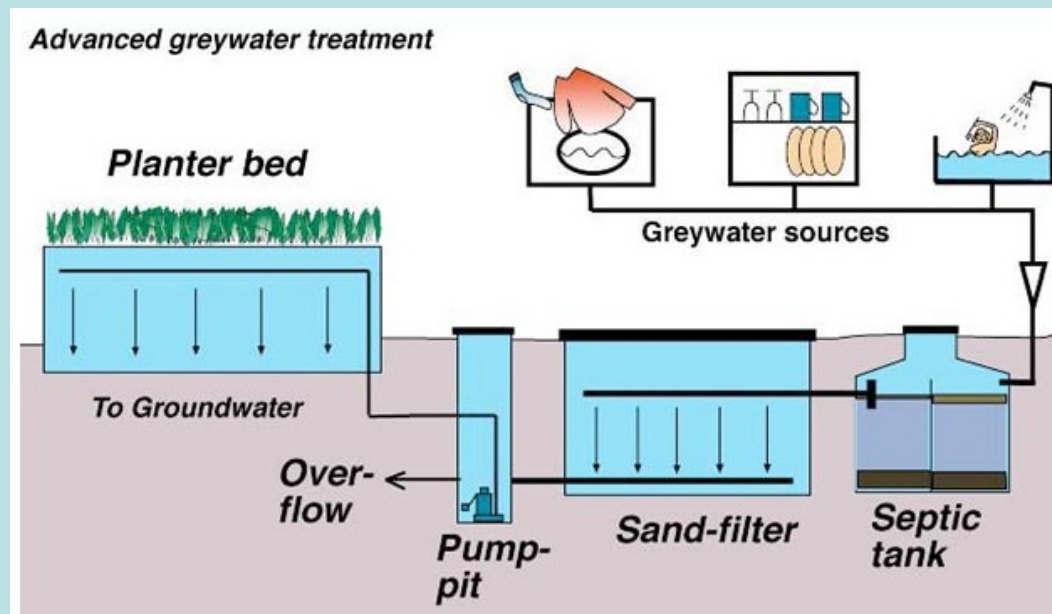
- Offset landscaping, flushing toilets, cleaning
- Reduces water-runoff
 - Flood
 - Pollution in Bay
- Recharges groundwater
- Increases soil moisture



8. Enable use of graywater
(for non-potable purposes)

What is graywater?

- **Graywater:** “Any wastewater that doesn’t contain human or organic waste. In practice, it is the water that comes from your tubs, showers, non-kitchen sinks and laundry machine.”
- **Not** toilets, dishwasher and kitchen sinks waste water



Barriers

- Concerns about health hazard
- Permitting
- Pipe marking
- Over-fertilizing (detergents)
- Complete separation from regular water system



Proposals

Residential - Graywater Feasibility Study

- Short-term:
 - Support graywater demo project
- Medium Term
 - Setup restricted ordinance allowing for gray water
 - Improve permitting process
- Long Term
 - All houses plumbed for graywater stub-outs
 - Rebates

Commercial

- Purple pipe water
 - Available Dec 2008
- Use recycled water to the max extent
 - Shoreline golf course
 - Incentives for corporation to sign up -- landscaping



9. Extend/match county incentives



What other cities are doing

- Example
 - Normal: \$75 per 100 sq. ft.
 - Matched: \$150 per 100 sq. ft.
- SCVWD cost-sharing agreement in FY06/07
 - Palo Alto: water conservation pgm: \$96,400
 - San Jose: water conservation pgm, \$480,000
 - Santa Clara: High efficiency clothes washer rebate, \$12,500
 - Morgan Hill: Water-efficient landscape rebate, and Residential HET Programs, \$50,000





Scope of Work for Cost-sharing

- **City Scope-of-Work:**
 - Identify participants
 - Administration: determine eligibility, site inspection, processing of rebate payments
 - Verification of installation

- **Water District SOW**
 - Design incentive programs
 - Marketing and promotion, advertising
 - Reimburse city for rebates

10. Install CIMIS Weather-Based Irrigation

(to be fleshed out)